#2

8010-ME-322700

TS / Conventional Magnet Facility

SEPTUM MAGNET ASSY. (DSM13002)

Specification # 5520-FM-318906
August 17, 1993
Rev.

Traveler Title (YOKE ONLY) Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil #1 (2 0 0 1 / 3 0 0 4) | | BUDGET CODE | TKS BD0109 | | TIEROD MA-322723 TO MAGNET ASSY @2KV <.05 μA |
| Coil Jumpers | | | | | |
| Thru Bus (as required) #2 | | | | | TIEROD MA-322723 TO MAGNET ASSY @2KV <.05 μA |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time 11-16-99

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil #3 | | | | | TIEROD MA-322723 TO MAGNET ASSY. @2KV <.05 μA |
| Coil Jumpers | | | | | |
| Thru Bus (as required) #4 | | | | | TIEROD MA-322723 TO MAGNET ASSY @2KV <.05 μA |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time 11-16-99

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | | | | | |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | | | |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time _____

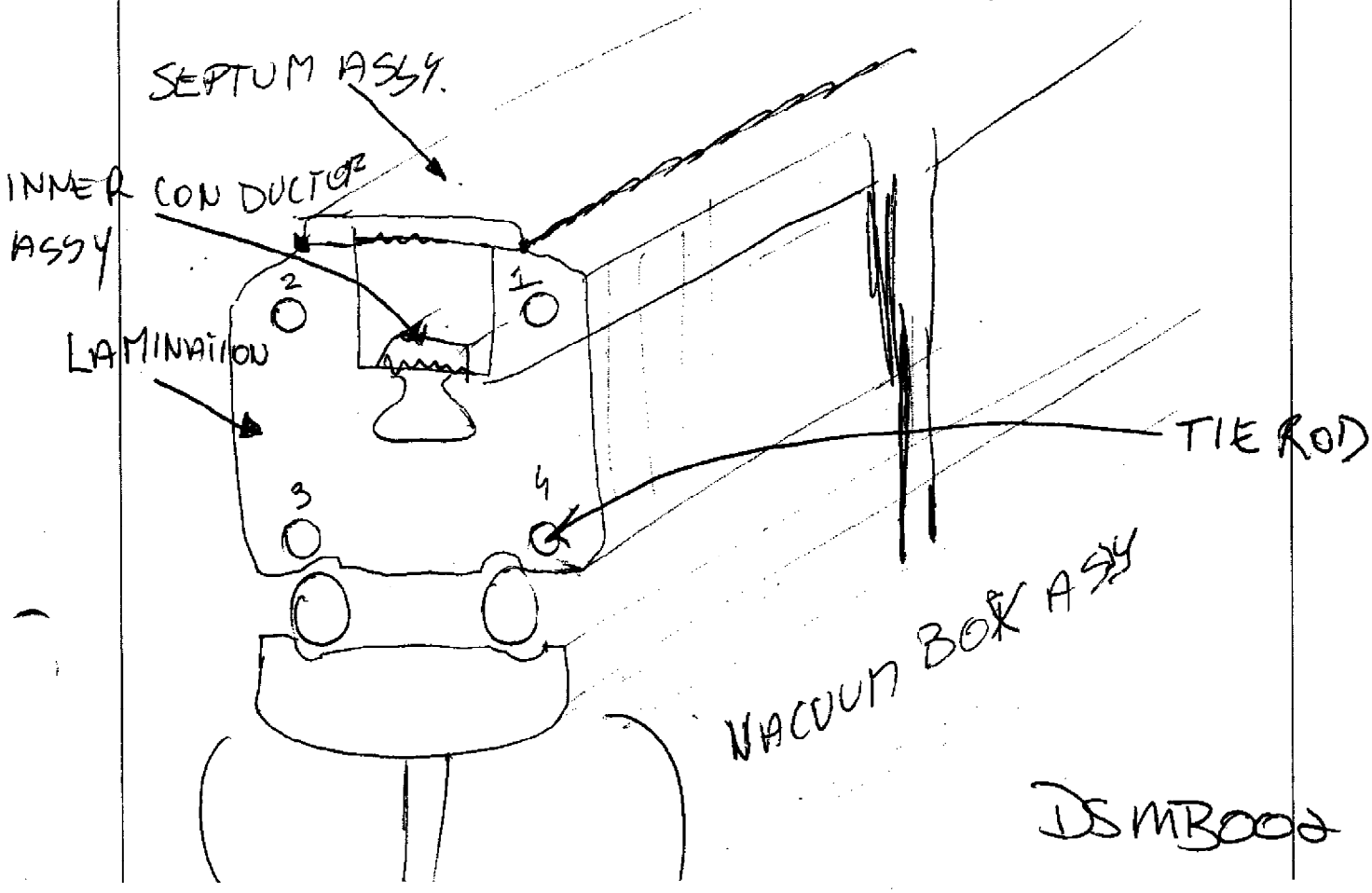
DABE 1

SEPTUM MAGNET
POST WELDING

11-29-99

MB-322730 COIL JUMPER

MB-322726 SEPTUM ASSEMBLY




DSMB002

PART NO. 322717 #2 SEPTUM

| DATE TIME | OPERATOR'S LAST NAME | SCALE UNITS BEFORE HELIUM PROBE | SCALE UNITS WHILE ENCLOSURE FLOODING | DETERMINATION OF MINIMUM DETECTABLE LEAK | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | MDS ÷ ( (Response - Bckgnd) ÷ Leak Value) = MDL | | | | |
| 3.30.00 | Jimenez | 5x1 | 5x1 | 2 | 4x5 | 5x1 | 2.68E-8 | 3.01E-10 |
| | | | | | | | | |

TS / Conventional Magnet Facility

#2 DSMB002

Specification # 5520-FM-318906
August 17, 1993
Rev.

ANTIPROTON SOURCE FINAL

Traveler Title SEPTUM MAGNET Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (µH / mH / H) DSMB002 | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | | FINAL DRAFT SPT-0002 | | | INNER CONDUCTOR TO YOKE + VACUUM VESSEL 2mA@25VOLTS |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | | | |
| Thru Bus Jumpers | | | | | |

Inspector SZ Date/Time 4-24-00

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (µH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | | | | | |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | | | |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time _____

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (µH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|

PART NO. SEPTUM MAGNET FINAL

| DATE TIME | OPERATOR'S LAST NAME | SCALE UNITS BEFORE HELIUM PROBE | SCALE UNITS WHILE ENCLOSURE FLOODING | DETERMINATION OF MINIMUM DETECTABLE LEAK: MDS = ((Response - Bckgnd) ÷ Leak Value) = MDL | | | | |
|---|---|---|---|---|---|---|---|---|
| Coil | | | | | | | | |
| T 4-14-00 | SZAL | 28 x 1 | 28 x 1 | 2 | 46 x 5 | 28 x 1 | $4.05 \times 10^{-8}$ | $4.00 \times 10^{-10}$ |
| (as | | | | | | | | |
| Thru Bus Jumpers | | | | | | | | |

Inspector _____ Date/Time _____

TS / Conventional Magnet Facility

Specification # 5520-FM-318906
August 17, 1993
Rev.

Traveler Title ANTIPROTAN #2 POST WELDING / FINAL SEPTUM SORCE #2 Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | DSMB002 | | | 9-22-00 | INNER CONDUCTOR TO VACUUM BOX 5MA @ 2KV |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | 9-23-00 WHILE VACCUM BOX UNDER VACCUM | | INNER CONDUCTOR TO VACUUM BOX 5MA @ 2KV |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time _____

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | | | | | |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | | | |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time _____

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | | | | | |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | | | |
| Thru Bus Jumpers | | | | | |

PART NO. SEPTUM MAGNET

| DATE / TIME | OPERATOR'S LAST NAME | SCALE UNITS BEFORE HELIUM PROBE | SCALE UNITS WHILE ENCLOSURE FLOODING | DETERMINATION OF MINIMUM DETECTABLE LEAK: MDS = ((Response - Bckgnd) + Leak Value) = MDL | | | | |
|---|---|---|---|---|---|---|---|---|
| 9-23-00 | SZAL | 58x1 | 58x1 | 2 | 60x5 | 58x1 | 4.52E-8 | 3.74E-10 |
| | | | | | | | | |

Inspector _____ Date/Time 9-23-00

# Fermi National Accelerator Laboratory
# Technical Division

## Antiproton Source Septum-Magnet

Drawing # ME-[illegible]  Serial # DSMB002

Hipot Inner Conductor to Vaccum Box @2000VDC 5μA

Weight: 1,[illegible]Lbs
Date Completed 10/17/00

# Instructions for the completion of the Discrepancy Report Form

**Definition:**
**>>Discrepancy Report - A form used to report all Class I & Class II problems (Discrepancies).**

**Process Engineering Responsibility:**
**>> Process Engineering - Maintains and Controls the Group's Discrepancy Report and Control Log.**

1. Traveler Title - Enter the title of the Traveler at the point the Discrepancy was found.
2. Enter the Specification Number in place at the time of the Discrepancy.
3. Enter the Revision in place at the time of the Discrepancy.
4. DR Number - Enter the next number from the control log that is maintained by Process Engineering.
5. Step No. - Record the step in the Traveler where the Discrepancy was found or the process stopped. Attach a copy of traveler page (s) or the process description as appropriate or required to clarify the condition.
6. Drawing No. & Revision - Reference the applicable drawing that describes the item or condition.
7. Enter - The Serial/Component/Item/Batch/Lot Number - (an identification Number assigned to the Item).
8. Nonconformance Description by First Hand Observer - Enter a brief and concise description of those actions, conditions, or facts that result in a nonconforming condition along with the reason it is out of specification. This is done by the person that observed the condition and is assisted by a Process Engineering Technician or Production Supervisor.
9. Enter Name, Title, Date - the First Hand Observer, his /her job title and the date the condition was observed.
10. Cause of Nonconformance - Enter the agreed event or condition that rendered the item unacceptable for use. If unable to determine the cause at this time, state "Unknown" with an explanation.
11. Responsible Authority - That person in charge of the area or activity in question states the cause and disposition of the nonconforming condition and verifies that the Corrective Action and Disposition have been completed. Before closing the report he determines if the configuration of the component/item is effected and if the nonconforming condition is Class I or II.

    **CONFIGURATION - The physical and functional characteristics of a Component/Item, including the materials, parts and limit criteria that are "frozen" in the design documents.**

    **CLASS I - A major problem that affects configuration, performance, form, fit, function, reliability or safety, significant cost or schedule increase.**

    **CLASS II - A minor problem that is not Class I, but can be eliminated by approved repair or rework that when completed in an acceptable manner will bring the nonconforming condition into compliance with the design requirements.**

12. Disposition - A plan by the Responsible Authority that will render the item or condition acceptable for use. This may be use-as-is, rework, repair, replace, substitute or scrap along with details.
13. Corrective Action to Prevent Recurrence - Those actions necessary to correct, minimize or eliminate the cause from repeating itself in the process, work instructions, work practices, inspections, drawing, tools, equipment or materials, etc.
14. Corrective Action/Disposition Verified - To be signed after the Cause, Disposition and Corrective Action to Prevent Recurrence have been put into place or completed.
15. Reviewed By: - The Process Engineering Manager performs a review of the report to assure proper completion; that the Corrective Action to Prevent Recurrence and Disposition have been completed and are acceptable.
16. Process Engineering determine (identify), appropriate problem area.

TS / Conventional Magnet Facility

Specification # 5520-FM-318906
August 17, 1993
Rev.

Traveler Title ANTIPROTAN #2 POST WELDING / FINAL SEPTUM SORCE #2 Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | DSMB002 | | | 9-22-00 | INNER CONDUCTOR TO VACUUM BOX 5MA @ 2KV |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | 9-23-00 WHILE VACCUM BOX UNDER VACCUM | | INNER CONDUCTOR TO VACUUM BOX 5MA @ 2KV |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time _____

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | | | | | |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | | | |
| Thru Bus Jumpers | | | | | |

Inspector _____ Date/Time _____

Traveler Title _____ Specification No. _____ Revision _____ Step No. _____

| | Resistance Ω | Ls @ 1 kHz (μH / mH / H) | Q | Ring (100 V) | Hipot |
|---|---|---|---|---|---|
| Coil | | | | | |
| Coil Jumpers | | | | | |
| Thru Bus (as required) | | | | | |
| Thru Bus Jumpers | | | | | |

PART NO. SEPTUM MAGNET

| DATE / TIME | OPERATOR'S LAST NAME | SCALE UNITS BEFORE HELIUM PROBE | SCALE UNITS WHILE ENCLOSURE FLOODING | DETERMINATION OF MINIMUM DETECTABLE LEAK: MDS = ((Response - Bckgnd) + Leak Value) = MDL | | | | |
|---|---|---|---|---|---|---|---|---|
| 9-23-00 | SZAL | 58x1 | 58x1 | 2 | 60x5 | 58x1 | 4.52E-8 | 3.74E-10 |
| | | | | | | | | |

Inspector _____ Date/Time 9-23-00

# Fermi National Accelerator Laboratory
# Technical Division

## Antiproton Source Septum-Magnet

Drawing # ME-[illegible]  Serial # DSMB002

Hipot Inner Conductor to Vaccum Box @2000VDC 5μA

Weight: 1,[illegible]Lbs
Date Completed 10/17/00

| 1) Traveler Title: | 2) Specification No.: | 3) Revision: | 4) DR No.: |
|---|---|---|---|
| Antiproton Source Septum Magnet/Generic Form | 5520-FM-318906 | none | SPT-0002 |

| 5) Step No.: | 6) Drawing No. & Revision: | 7) Serial/Component/Item/Batch/Lot No.: |
|---|---|---|
| Final | 010-ME-322700/8010-ME-32296. | DSMB002 |

8) Nonconformance Description by First Hand Observer: ☐ Class I ☑ Class II

Print 8010-ME-322965 Note number six "Check the insulation of the inner conductor Assy. MD-322727 and tie rods MA-322723 to the yoke and base plate ME-322697 at 2KVDC for 1 minute, leakage current should not exceed 5 uA". Actual measured current leakage inner conductor to yoke, and base plate is >20uA at 25 VDC. It was observed that the weld at the junction of both end plates MC-322699 and the Shield Plate MB-322701 penetrated into the inner conductor Assy. and base plate ME-322697 See imageDSMB002-1-DR-SPT-002.JPG and DSMB002-2-DR-SPT-002.JPG.

9) Name Dennis Gaw Date: 5/23/00

10) Cause of Nonconformance:

Too heavy weld was applied between end flanges and side plate

11) Responsible Authority Date: 8/22/00

12) Disposition:

The weld shall be carefully milled out, the burnt kapton insulation to be replaced with new, the slots to be patched.

11) Responsible Authority Date: 8/22/00

13) Corrective Action to Prevent Recurrence:

Instruct welder better before welding

11) Responsible Authority Title: Engineer Date: 8/22/00

14) Corrective Action/Disposition Verified By:

11) Responsible Authority Date: 8/22/00
[ ] Class I [X] Class II
Will Configuration be affected? [ ] Yes [X] No

15) Reviewed By:

Process Engineering Manager Date: 8/22/00

16) ☐ Material ☐ Manpower ☐ Method ☐ Machine ☒ Measurement
Process Engineering determine (identify), appropriate problem area and check.

SCANNED
AUG 23 2000
TD-EFD PROCESS ENGINEERING

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